



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,745	07/10/2006	Ursula Ziegler	CICTG-23-PCT-US 2003/G018	3493
22827	7590	09/26/2011	EXAMINER	
DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449			FREEMAN, JOHN D	
			ART UNIT	PAPER NUMBER
			1787	
			MAIL DATE	DELIVERY MODE
			09/26/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,745	Applicant(s) ZIEGLER ET AL.	
	Examiner JOHN FREEMAN	Art Unit 1787	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4, 7, 8, 10-13, 15-17, 19 and 21-31 is/are pending in the application.
- 4a) Of the above claim(s) 15-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4, 7, 8, 10-13, 19 and 21-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/16/2011 has been entered.

Claim Rejections - 35 USC § 103

2. Claims 2-4, 7-8, 10-13, 19, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Flexman et al. (US 2004/0121175) in view of ARKEMA brochure (PEBAX® Application Areas. 6/2000).

3. Regarding claims 2-3, 10-12, and 21-22:

4. Flexman discloses an article having substrate comprising a blend of POM and a thermoplastic polymer, and another layer adhered to the substrate [0014]. The thermoplastic polymer can be thermoplastic polyurethane [0033], polycarbonates, SAN, etc. [0041]. The overmolded layer on the substrate can be a thermoplastic elastomer [0091-92].

5. Flexman is silent with regard to a polyetheramide elastomer.

6. ARKEMA sold polyetheramide elastomers under the name PEBAX® as evidenced by the tradematerial brochure provided. The brochure notes PEBAX® 2533 provides suitable elastomers for mechanical parts, sport articles, and medical devices (p10). The number "25" in "2533" refers to the shore D hardness of the elastomer and "33" refers to the series (p4). This elastomer satisfies the presently disclosed chemical identity requirements because it is the same material used in the present invention.

7. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use commercially available polyetheramide elastomer, including PEBAX® 2533, in the composite taught by Flexman to arrive at a composite having desirable qualities for a given end use such as mechanical parts, sport articles, and medical devices.

Art Unit: 1787

8. The present claims are written in a product-by-process format. The examiner takes the position that the final composite structure of the tubing taught by Flexman combined with ARKEMA would be indistinguishable from the final product of the presently claimed invention, as both describe a layer of POM adhesively bonded to a polyamide elastomer.

9. With regard to the presently claimed tensile bond strength limits, the examiner takes the position that the composite tubing of Flexman combined with ARKEMA satisfies Applicant's requirements given that the composite has the same structure as claimed.

10. Regarding claim 4:

11. The POM and TPU can have conventional additives, e.g., stabilizers [0028; 0089].

12. Regarding claim 7:

13. The TPU makes up 5-20% of the substrate [0031].

14. Regarding claim 8:

15. As noted ARKEMA discloses Pebax® 2533 has shore D hardness 25.

16. Regarding claim 13:

17. The elastomer layer is "co-continuous," i.e., completely covers the substrate [0014; 0020].

18. Regarding claim 19:

19. Flexman notes sealing clips can be made [0015]. Furthermore, the examiner considers the POM coated with the thermoplastic polyetheramide elastomer to be a non-slip or easy-grip component intrinsically.

20. Regarding claim 23:

21. While it is recognized that the phrase "consisting essentially of" narrows the scope of the claims to the specified materials and those which do not materially affect the basic and novel characteristics of the claimed invention, absent a clear indication of what the basic and novel characteristics are, "consisting essentially of" is construed as equivalent to "comprising". Further, the burden is on the applicant to show that the additional ingredients in the prior art, i.e. the thermoplastic in the POM, would in fact be excluded from the claims and that such ingredients would materially change the characteristics of the applicant's invention, See MPEP 2111.03.

Art Unit: 1787

22. Regarding claim 24:

23. With regard to the presently claimed tensile bond strength limits, the examiner takes the position that the composite tubing of Flexman combined with ARKEMA satisfies Applicant's requirements given that the composite has the same structure as claimed.

24. Regarding claim 26:

25. As noted ARKEMA discloses Pebax® 2533 has shore D hardness 25.

26. Regarding claims 27-29:

27. The examiner submits the ARKEMA elastomer satisfies the presently disclosed chemical identity requirements because it is the same material used in the present invention.

28. Regarding claim 30:

29. The elastomer layer is "co-continuous," i.e., completely covers the substrate [0014; 0020].

30. Regarding claim 31:

31. Flexman notes sealing clips can be made [0015]. Furthermore, the examiner considers the POM coated with the thermoplastic polyetheramide elastomer to be a non-slip or easy-grip component intrinsically.

Claim Rejections - 35 USC § 112

32. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

33. Claim 24 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

34. Claim 24 recites a composite comprising a polyacetal component "consisting essentially of polyacetal" and a polyamide elastomer component "consisting essentially of" a disclosed elastomer wherein the bond strength between the components is "at least 1.0 N/mm." The specification does not

Art Unit: 1787

support this bond strength limitation. In the Table in the specification, Example 3 is the only example to have an unmodified POM copolymer component (C 9021) and its listed bond strength to an elastomer is 0.9 N/mm, which is less than the present requirement.

Response to Arguments

35. Applicant's arguments filed 5/16/2011 have been fully considered but they are not persuasive.

36. To simplify the issues in the case, the examiner has removed the Tanaka reference and used the ARKEMA disclosure.

37. Applicant submits Flexman's "broad disclosure [of thermoplastic elastomers as a class] can not properly be said to give guidance to one of skill in the art to any particular member of that genera, particularly given the known teaching in the art as to the difficulty in adherence between polyacetals and other materials" (p10).

38. The examiner respectfully disagrees. Although Flexman broadly discloses thermoplastic elastomers, one of ordinary skill in the art would recognize this would encompass polyetheramide elastomers. An artisan would seek to apply commercially available elastomers, such as PEBAX® 2533, to Flexman's teaching. While the examiner may agree that one would not seek to employ exotic elastomers with unknown properties with Flexman's teaching, it would seem that commercially available products having well understood properties and already used in a wide variety of applications (sports, mechanical parts, medicine) would be ripe for use in Flexman's teaching. Finally, as to the argument that the disclosure of the genus gives no guidance to any particular species, the examiner submits the desirable properties of the polyamide elastomers made available by ARKEMA would provide motivation to one of ordinary skill in the art to combine with Flexman's POM article.

39. Applicant submits "one...would not be lead to any reasonable expectation of success in attempting to overmold a polyamide copolymer onto a polyacetal substrate, particularly given the known difficulties in adhering materials to polyacetals" (p12).

40. The examiner respectfully disagrees. While it is true Flexman discloses there exist difficulties in adhering polyacetals to other components, the inventive concept of Flexman relates to adhering these

Art Unit: 1787

difficult materials to polyacetal. To say there is no expectation of success for adhering the two components together is to say Flexman does not disclose a workable invention.

Conclusion

41. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Flexman '509 discloses POM adhered to other components.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN FREEMAN whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 9:00-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John Freeman
Examiner
Art Unit 1787

/John Freeman/
Examiner, Art Unit 1787

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1787